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Russia today aspire to form postindustrial economy based on knowledge, to organize new social and economic structure. More and more often authorities declare an idea of transformation of domestic resource economy into innovative, proclaim the beginning of creation of national innovation system in the Russian Federation. But in reality changes in this area are not observed. In the present issue is undertaken attempt to consider in details key problems of innovation systems implementation and summarize analytical material about innovational policy in Russia.

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Introduction

Nowadays the economic and society endure process of fundamental transformation. Not only separate elements are changed, but also the organization of all economic system. Russia also tests special pressure of changes and should operate difficult processes of transformation to catch up in economic development. And for this purpose it is necessary to use flexible and innovational model of manufacture and to develop knowledge economy. Such economy generally focused on use of new knowledge, high-tech manufacture and wide distribution, instead of simple exploitation of accessible natural resources. Through formation of such postindustrial economy based on knowledge the state has possibilities for organization of essentially new social and economic structure. The authorities of Russia are also aspire to this changes and even more often declare necessity of transformation of domestic resource economy into innovative, about requirement of formation of national innovation system (NIS) in the Russian Federation. To provide worthy positions in the international community and in the world market, Russia should possess today ability to introduce competitive innovations and to carry out innovative development. And it concerns not only introductions of technological innovations, but also all spectrum of problems of the social development, including economic, investment aspects, questions of social and organizational innovations. Despite comprehension by authorities of requirement for formation of innovation system in the Russian Federation, real changes in this area are not observed. In the present article is undertaken attempt to consider in details two key questions:

1) What obstacles for formation of innovation systems in Russia are exists?

2) How is possible to change current situation?

Definitions preview

The concept of innovation systems appeared and actively developed in 90th years of last century. The birth and rapid growth of popularity of the concept of innovation systems were a consequence of sharp exasperation of competitive struggle at the world markets (notorious globalization of economy), of bared plural defects of traditional regional models of economic development and at the same time a great number of occurrence of successful technological clusters and branches at the regional level. On this external background in the academic environment the new analytical paradigm which postulated necessity of active stimulation of growth of the regional competitiveness which is based on specialized technological resources, qualified labour and developed network of the organizations-intermediaries connecting these resources together has quickly fleshed out.

One of the first developers of the new concept of regional innovation systems (RIS) was Professor Philip Cooke, Director of the Centre for Advanced Studies of Cardiff University (Great Britain). The idea of regional innovation systems came about by combining the regional

innovation policy already in existence in the United Kingdom with regional innovation networks. Philip Cooke now is the leading world theorist in the field, he has offered formal three-level definition of regional innovation systems as a set of nodes in the innovation chain, including knowledge-generating firms and institutions, as well as knowledge-exploring enterprises, and a number of specialized functions such as service infrastructure, financing instruments, commercialization and market expertise, and policy support. The key to successful regional innovation, according to Prof Cooke, is "a self-organizing, open system which translates 'exploration' knowledge […] to the point where it can be successfully exposed to 'exploitation' knowledge in the form of a commercial innovation on the market, embodying new knowledge, whether scientific, technological or creative" (RIE 2007).

Recently innovation system conceptualized as system for transformation of knowledge (Schienstock and Hamalainen 2001). It means that knowledge is considered as the basic entrance information which the innovation system receives from environment. This knowledge in the system transforms into new knowledge that means that knowledge also is the basic result at the system exit. Knowledge can take the form of the new scientific laws, new ideas, concepts and expertise, the new patents, new skills or competencies, technological or organizational achievements. Process of transformation of knowledge includes following functions: acquisition of knowledge, manufacture of knowledge, spread of knowledge, ordering and standardization of knowledge, application of knowledge, and management of knowledge. These functions are carried out by the several various organizations, including universities, research institutes, R&D departments of the companies, technologies transfer institutes, standardization institutes, patent agencies and the government agencies included in the innovative policy. Institutes are considered as key elements of innovations system. Authors of the concept often speak about institutional environment support. In essence institutional environment supports, stimulates, and regulates processes of innovations. But institutes not only support innovative activity, they also can interfere with it. As an example they are traditions or law regulation. For the effective work of innovation system, important to exclude institutes which interfere with innovations and to found those which support innovations (IRIS 2006).

Summarizing a short definitions review of the concept of innovation systems it is necessary to define a viewpoint from which author will consider innovation system:

Innovation system is a system of network interaction of social institutes and private persons for the purpose of creation of new knowledge (innovations) and their subsequent introduction in daily practice.

"Obstacles system" in Russia

Russian innovation policy is beginning to change under the influence of various global processes today. However, the intellectual potential in the regions and the possibilities of its capitalization are still not used to the full extent. Judging by the structure of Russian export there are no production clusters competitive on the world market in Russia today. What prevents

Russian companies from being competitive in the western market? The answer is - expensive, non-competitive production. Only large corporations can afford complete modernization of their production. Others still use the outdated methods of production. Enterprises lack modern technologies. Their integration with the innovation and research organizations today is an absolutely necessary condition in the process of technological modernization, production of competitive goods and employment of highly qualified staff. An integrated approach is the most effective means in the process of achievement of positive results. Russia needs a harmonious state program of innovational activity support and a unified organizational basis of management.

At the same time, many ministers speak about innovations and diversification of Russian economy but there is **still no clear strategy or innovational policy in the country**. This policy can be designed and performed only on the basis of the state-guaranteed order.

Despite the importance of a federal policy at formation of regional innovative programs, in a modern situation possibility for management of innovative processes at the national level decreases. It is influenced first of all by essential distinctions in economic development of regions. The regional aspect becomes more important in innovative processes. Regional innovative activity closely connected with globalization process. In the modern world where the companies have more and more freedom to move their industrial activity worldwide, the region becomes "natural" economic area. National borders in innovative processes are erased since transnational corporations break chains of the added cost into separate functions and place them there where find local advantages. In this situation the regional governments should adapt global strategies of the companies, creating supporting conditions and establishing the special organizations and institutes that will make region attractive to foreign investments, and also will allow to keep the companies in the territory. Positive examples of the similar policy testify that competitive advantages of regions can be created consciously. Geographical localization represents the big advantage in development of innovation systems because it simplifies communications and exchange of implicit knowledge between the specialized organizations.

One of the major strategic aims of Russia at the current stage is to increase the territorial capitalization of regions. Thereupon, concerning the innovative development, the new role of the state can be designated as a role of the catalyst of the innovative processes supporting researches and innovative activity in a new technological and organizational paradigm, as arbitrator of dispersing interests and prospects, as organizer of dialogue between various economic participants of the future products and as initiator of new collaboration and programs. On the other hand, regions should aspire not only to make more production, but concentrating inside the intellectual rights to it, financial resources, qualified personnel. It is in turn at regional level promotes the solution for one of the key purposes of state policy in Russia – to create “knowledge-based economy”.

Thus, the **necessary condition for successful transformation of the Russian economy to an innovative way of development is construction of the coordinated, effectively cooperating regional innovation systems** including the research and consulting organizations,

the financial companies, the business education organizations, the industrial enterprises, trading enterprises and different other service organizations. The first steps on designing and creation of RIS are already realized in some regions of the Russian Federation, but there is no accurate model of interaction (communications) in regional innovative system, mechanisms of its mutual relations with the federal authorities, the external organizations and private persons are not generated. It is not obviously possible to copy similar western models for Russia because of domestic cultural, social and economical features.

Certainly, everything not so bad and something had been done during first decade of XXI century from government side. But Russia still need systematic approach and innovational strategy. Separate elements of national and regional innovational systems were created, but in the absence of the system approach there is still exists a rupture of an innovative cycle: when **from idea towards implementation the innovation passes through different stages of development, and at certain stages there are no the corresponding supporting institutes which are carrying out necessary functions.**

However, according to viewpoints described above, **the interaction and communication between the participants of innovation processes and creation of supporting organizations network are the important factors of success in developing regional innovation potential**.

On the other hand, it is planned by authorities to create in Russia such important objects as business-incubators, R&D centers, special economic zones, technoparks and other infrastructure elements of NIS. Some of them are also exists. However, by some reason the development programs are not include any key NIS element like “Monitoring and Analysis Center”, which could draw out the strong and weak aspects of the region, contribute to coordination of participants’ strategies, facilitate the formation of RIS. Such a center in its turn could contribute to the development of a future business-incubator or R&D center structure. In the long run the activity of the center will support the development of a specific cluster in the territory of the region.

Many Russian research institutes dealing with analysis and modeling of innovation economic systems, with all respect to the specialists who work there, would offer some reports including the analysis of stats data and translations of western models rather than the mechanisms of creation and modernization of Russian science-driven industry. The detailed reports are useful only if they offer specific solutions of the problems. But it is impossible to find a solution without taking part in “real” processes. Historically in Russia the people who perform analysis and make conclusions never offer any solutions of the problems because they practically do not participate in real processes. Besides, nobody knows who will be responsible for the realization of new projects.

That is precisely why the representatives of regional and federal governments experience serious difficulties trying to estimate the offered innovation projects. And here is another serious problem - lack of the institute of experts in the sphere of innovation systems. It is first of all

connected with the fact that there are no approved models of national and regional innovation systems in Russia today.

On the other hand, the financial groups and banks show great interest in commercialization of the system projects. But they are mostly interested in the development strategy of the production branches, which is impossible without state support. That is why we have a two-edged situation: the government cannot estimate new projects without a proper institute of experts, while business is expecting a clear strategy of the industrial development from the government. Nevertheless, there appear a sufficient number of projects laying a foundation to an innovation system. However the initiators of the projects have to face serious difficulties because of lack of development strategy for such processes. **There is no precisely formulated federal project for formation of industrial and innovation systems in Russia today**.

In default of such a project offered by the government it can be initiated by the interested parties, such as business or institutions of civil society. That is what is happening now. Alongside with the design of the project it is necessary to formulate the scenarios of its execution, i.e. a coherent position of all interested parties. That is why communication and exchange of opinions are very important in this process.

According to the research of Institute of Regional Innovation Systems (Saint-Petersburg, Russia), today in most regions of Russian Federation the implementation of innovation development programs is not complete (Table 1: Analysis of legislative acts from 34 regions of Russia). Some key aspects of interaction between small innovation companies, research and educational institutes and large industrial companies are left beyond the scope of the programs. Besides, the regions often lack a unified organizational structure providing for creation and development of an integral national and regional innovation strategy.

As we see, many **Russian regions have no unified organizational basis providing development and implementation control of an innovation strategy**. The complex infrastructure of management and control of the regional intellectual potential does not exist in Russia today. Such an infrastructure will make it possible to find significant projects, to carry out expertise, to find various ways of the projects capitalization, to find the participants, ways and instruments of investment. It is obvious that many regions today lack of developed innovation system, full-fledged strategy of innovational development and system of control of innovational processes.

So, from that point the **fundamental problem complicating a diversification and innovative development of economy in Russia consists in absence of a interaction system for innovative processes which would provide productive communications between all interested participants of innovative activity**.

The discourse analysis of “round tables” meetings, seminars, innovational forums and some public speeches, conducted by author in the course of research of this theme, allows to allocate

other most common system problems, which developers of regional innovation programs in Russia have to face:

1. Lack of events aimed at creating long-term planning tools and current RIS management and, as a consequence, lack of budget funds appropriated for key projects supported by regional governments.
2. Impossibility of assessing the effective strength of the programs due to lack of proper government statistics on these issues (lack of legislative framework).
3. Insufficiency of legislative framework of innovation activity. In particular, lack of legislative definitions (and criteria) of an innovation product, innovation project, hi-tech production branch and so on.
4. Lack of clear distinction between federal and regional functions in the sphere of innovation activity.
5. Absence of distinct information about the national innovation system under formation.
6. Most regions lack the strategy of innovation development. That is why the development innovation programs often do not give an expected result.
7. Most regions lack the mechanisms of regional and national systems integration and including RIS into international networks.

Therefore, at this moment regions have no developed innovation systems, have no high-grade strategy of innovative development, and, accordingly, cannot effectively develop. There is no clear split of functions between the federal and regional authorities in the field of joint strategic development of regional and national innovation systems. The effective innovational development of the regions is impossible today in Russia due to lack of a national innovation system and efficient strategy of innovation development on the federal level. The federal governing bodies do not perform some functions of supporting the mechanisms of innovation processes development. According to the international experience, federal authorities can carry out six groups of functions for support of mechanisms of development of innovative processes in economy of regions (Table 2) (IRIS 2007). At the present time a number of important functions, especially the analytical, coordinative and consulting functions, are not fully performed on the federal level in Russia.

As you see, **most of the problems lay in the communication sphere and depend on the mutual understanding between all participants of the innovation processes**.

Where is the exit?

In these circumstances, described above, an integral approach to innovation activity development becomes particularly important. Author consider that the **prime importance tasks for Russian authorities** at this stage are:

1. Creation of a unified organizational basis for strategy development and further realization.
2. Design of the federal strategy (NIS program project) for innovation activity development and support linked with regional innovation programs.
3. Design and implementation of the NIS and RIS development plan.

Besides, it is extremely important to choose the strategic instruments of assessment of innovation system efficiency and monitoring of external environment (comparative research, technologies evaluation, technological prognosis).

Nowadays the government of Russia should arrange the conditions for innovational, science-driven production by means of stimulating the creation of high technology plants, exempting the imported equipment from taxes and abolishing VAT dues for innovational enterprises. The directions of growth should be chosen on a global basis, the governmental program of development of innovational and technological production branches should providing conditions for introducing the results of scientific research into manufacturing process and keeping integrated approach to coordination of actions in the process of formation and development of national and regional innovation systems in Russia. The realization of such governmental program will make it possible to improve the investment appeal of the state in the knowledge-intensive branches and will create the regional innovation systems integrated with the national and foreign systems, which will make it possible to develop high-tech productions and create workplaces for a lot of highly qualified specialists of Russia.

One of the most important matter here - it is the united informational, analytical and management organization for the needs of all key participants interested in regional intellectual potential. Such organization will appoint projects, experts, possible methods and participants of the projects capitalization, methods and instruments of investment, ect. Alongside with management organization for RIS development and coordination it is necessary to prepare ways and instruments for further management of innovational processes on the systematic level. The abovementioned processes should provide comprehensibility and clarity of decision-making for all the process participants. They should also provide monitoring of projects realization, fixing the results of the projects from the both points of view: conformity of the account benchmarks; social and economic efficiency. And they should provide for correction of procedures and standards of making and realizing the decisions in case if they prove to be inefficient.

Besides, it is important for the government of Russia to analyze the already existing projects of utilization and capitalization of scientific and industrial potential. It is necessary to correlate the approaches that the projects' initiators are guided by with the perspectives of regional intellectual potential, with the further NIS and RIS development.

The regions from their side should not only aim at producing more products but also at accumulating intellectual property rights, financial resources and skilled personnel. In its turn it will help to solve one of the key problems of Russian state policy, which is the creation of the economy of knowledge. Besides, it will facilitate the process of structural reforms aimed at growth of competitiveness and innovativeness of Russian economy.

In whole, **Russia needs a new approach in innovation policy today**. It has to deal with new types of activities requiring serious expertise. It is obvious, that the state is not able to solve all the problems and fulfill all the tasks independently. As it were said above, informational,

consulting and coordinative functions are poorly fulfilled on a federal level (Table 2). In this situation and as it were marked as prime importance tasks **a new NIS program of global regional expertise** can become extremely important because it will be able to support regional innovation process in many aspects. Such a program is aimed at implementation of communicative, analytical and consulting functions on the political level, determining the scientific and technical policy of the country, and the operational level realizing the innovation projects. Since the participants of innovation processes cannot fulfill these functions (because they have other tasks), **it is necessary to create a special supporting organization, which is supposed to provide for communication, cooperation and analytical work**. Such an organization relatively named as "Monitoring and Analysis Center" (MAC) shall support a specific branch of industry or an inter-industrial cluster.

Organizational aspect of the NIS program represents the idea of science, business and authorities integration. Possible organizational structure of the program:

- ✓ the program is regulated through regional partnership networks comprising of public sector, business sector, regional authorities and scientific and research sector (RIS prototype);
- ✓ the program is realized by MAC filials regionally located in special economic zones, technoparks, innovation centers at the universities and other similar places;
- ✓ the program is coordinated by National MAC, comprising of the representatives of business, science, education, governing bodies and key ministers.

Key points of MAC's activity:

1. Analysis of information. The experts analyze global, national and regional tendencies of innovation development. The center is supposed to reveal the processing and suppliers chains already existing in the region. It should identify the problems (lack of chain links); analyze possible problems solution (compensation of a chain link by creation of local infrastructure, engaging foreign manufacturers, purchasing foreign technologies and so on); define the technologies lying at the intersection of branches, the development of which could accelerate the development of other branches and clusters.

The problems can be disclosed by direct and reverse ways. The direct way – that is from the existing technology to the problem, which can be solved by means of the technology. The reverse way – that is from the existing problem to the technology necessary to solve the problem.

2. Organization of discussions (forums, round tables). The most significant participants of innovation process (and regional economy) (representatives of science and education sectors, manufacturers, regional authorities, financial structure and consumers) discuss the burning problems and variants of their solution. The results of such discussions are the projects chosen for development, the participants of the projects realization and the sources of financing.

The projects of this kind are strategically important for the region because they contribute to the development of industry branches and inter-industry clusters. The existing innovation structures are not responsible for searching and initiating such projects because their tasks are to develop small and medium innovation business, to support innovation start-up companies, to perform expert analysis of technological projects and commercial ideas and so on.

3. Creation of data bases. Tendencies and prospects of development of science and technologies. Demand of new types of products and new technologies. Sharing of information between science, business, society and state (regional authorities) structures.

The main objective of the MAC is to create a platform for constructive dialogue of all the participants interested in the innovation development. The main activity of the center is aimed at supporting the realization of strategically important regional projects, which contribute to the development of particular industry branches and clusters. In the current situation it is necessary to pay expert attention to the projects that have already emerged and to adjust them to the general plan of formation of Russian innovation system. The development of such a plan should become a NIS project. In fact, the national project will provide for the conformity of certain innovation business projects at all levels and will create Russian data base of intellectual property. Besides, the NIS project will help to create the institute of experts in the sphere of the national and regional innovation systems. The results of the NIS project will be the basis of the major federal program of regional innovation systems support. Today this is the most optimal way for the development of Russian economy of knowledge.

Basing upon the fact that a centralized national innovation system proved to be ineffective in big countries (IRIS 2007), **it is suggested to accept the development of regional innovation systems as a basis for Russian NIS model coordinated on the national level**. It can be performed by way of realization of a number of state programs (as it were described with MAC). As a matter of fact, these programs are supposed to determine the key mechanisms (instruments) of regional innovation systems development:

1. Regional innovation structure development is aimed at determining the key competencies of the regional industrial, educational and research institutes on the regional, national and international levels.
2. Troubleshooting (analysis) of the factors hampering the innovation development of the companies in the region (identification of problems typical for high-technology productions and methods of their solution).
3. Revealing the most probable tendencies of future high-technology branches development (regional foresight).
4. Creation of regional industrial centers of expertise (MAC filials) responsible for branch monitoring, creation of expert base, establishment of partnership between the participants of innovation processes.
5. Developing the mechanisms of intellectual business-services support (consulting, engineering companies).

6. Registration of innovation companies, design of the system of criteria of innovation companies and development of statistical indicators characterizing their activity.

What about the formation of regional innovation systems, so, it can be fulfilled on several levels, each of which represents a special project:

1. The first level - formation of organizational structure (MAC) for the purpose of creation of regional innovation system. Finding the interested institutes and organizations and creating a steering committee. This is the most difficult political task. The abeyance on this stage complicates the realization of the projects on the next levels.
2. The second level - design of the strategy for the regional industry development, formation of clusters, industrial groups and branches. At this stage we should make a fundamental analysis of scientific and technical, educational and organizational potential of the region in order to determine the directions of technological research (protoclusters).

So far as the second stage is concerned, business needs a strategy of industrial development for 10-15 years. They want to know what they will invest their money into. The government plays a great role on this level. The state policy directly influences the innovational processes. These processes depend on such factors as business environment, market orientation of fundamental researches, system of motivation of the research activity and organization of higher and professional education. That is why the government should be very careful about such projects.

Centers of monitoring and analysis (MAC filials) are specific projects of regional strategic development of production branches. Such regional centers can become basic elements of innovational development. A center is an organization responsible for collection of information on technologies and markets, estimation of their efficiency, organization of the exchange of opinions of all interested participants of the process and providing a synergetic success of each innovation project. It is a kind of a center of strategic development giving an expert evaluation of the projects and determining the directions for further development and cooperation. The projects of this level can be financed on a parity basis by the federal and regional governments and the interested business structures.

3. The third level is the realization of the investment programs initiated on a previous level. These projects can be called modernization projects.

The centers of collective access to new technologies can become the best solution to overcome a technological crisis in Russia. Collective engineering centers will be able to make new technologies available to several enterprises. This is the most rational and economically feasible mechanism of modernization. The projects could be financed by the interested financial groups and business structures by way of public and private partnership. The centers will let the enterprises improve their competitive strength by way of reduction of term and errors of design, labor costs and expenses in co-engineering. At present time such centers already exist in Russia. There are not many of them but they already proved their efficiency. These projects

change the business-models of the enterprises. All of them are financed by large corporations. It is important to note here that the success of such projects is to a great extent determined by the leader and the team.

The innovation projects are created at each of the abovementioned levels. Each project is designed to solve the problems existing in a region. In fact, the development of regional innovation system represents the process of revealing the functions, which are not fulfilled at the moment and delegation of the functions to the already existing or newly created organizations. These reformations should have a system-based character and the scenarios of their further development approved by all interested participants.

The studying business cases where all participants come to general consensus are the effective instruments in this situation. The methods of such studied development scenarios are actively applied by business structures and the government in complicated multivariate projects realization. It is important to realize each scenario as a business project according to accepted world standards. And again the team plays an important part in the process of realization of a project; otherwise any project will remain just a project.

Both business and government today in Russia are used to down-to-earth projects. For instance, modernization projects are more intelligible than a project offered by MAC and, all the more, the projects of creation of clusters or regional innovation systems are even more complicated, in spite of the fact that there are the examples of their efficient commercial realization. The participants of the process should first of all change their attitude to the projects and move to a new level of their comprehension. The projects of such a level require a corresponding institute of experts. As has already been mentioned, the institute of Russian experts is only being created now. We can use foreign experts' experience in order to create our innovation systems. But we cannot copy their models blindly because of certain social, cultural and national peculiarities of the projects realization in Russia. We can only prepare our own experts basing upon our experience.

In the current situation it is necessary to pay attention to the projects that have already emerged and to adjust them to the general plan of formation of Russian innovation system. The development of such a plan should become a national project. In fact, the NIS project will provide for the conformity of certain innovation business projects at all levels and will create Russian data base of intellectual property. Besides, the project will help to create the institute of experts in the sphere of the national and regional innovation systems. **The results of the national innovation project will be the basis of the major federal program of regional innovation systems support**. Today this is the most optimal way for the development of Russian economy of knowledge.

Finally, author would like to mark again that from his viewpoint it is necessary to develop such a NIS model, which will be capable to provide complex information and communicative service for realization of effective interaction of all elements of Russian NIS & RIS; which will

support effective contacts of all participants of innovative and investment processes; which will promote trust and coordination for their activity purposes, economic interests, and realization of projects. Because now the main problem for Russian NIS & RIS is miscommunication between innovational activity participants.

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Table 1: Analysis of legislative and program certificates of 34 Russian regions allows to allocate following groups of functions of assistance to development of regional innovative systems:

Function	Number of regions
Creation of innovation development zones	27*
Creation of a favorable innovation climate	20
Searching for skilled personnel for innovation-based activity	5**
Development of innovation infrastructure	13
Promotion of high-technology products in the market	9***
Informational support of innovation activity	4
Development of innovation networks	2****
Promotion of intellectual business-service (consulting) sector	1*****
International and inter-regional cooperation	2
Direct funding of innovation activity	27

*The given number is specified according to the number of applications received from the regions for creation of exclusive economic technical integration zones (TIZ).
**In 4 cases out 5 the regions support young scientists and only in one case regional authorities hold an educational program for innovation managers.
***This is almost always about restriction of purchases in favor of high-technology products at the expense of regional budget.
**** Novosibirsk and Kaluga regions are supporting technologies transfer networks, which is a purely mechanical means of sci-tech products promotion. But it does not completely correspond to the term “innovation network” because in this case the stress is laid on using the Internet but not organizing the innovation activity differing from market or bureaucratic activities.
*****This is a contingent figure because the only example is Tomsk region, where the intellectual service provider is not a commercial organization but a special department of the regional administration.

Table 2: Federal authorities functions for support of mechanisms of development of innovative processes in economy of regions.

Functions	Activity
Analytical	➢ Benchmarking ➢ Foresight ➢ Advancement of effective methods ➢ National strategy development
Initiative	➢ Legislative control ➢ National programs
Consulting	➢ Formulation of guideline documents for (regional) innovation systems development ➢ Expert analysis ➢ Coaching of regional policies developers
Supporting	➢ Financial support ➢ Tax benefits ➢ Purchasing policy ➢ Establishment of state institutes
Coordinative and intermediary	➢ Creation of inter-regional and national discussion platforms ➢ Trans-regional exchange and co-developing
Monitoring	➢ Assessment program development